

What is claimed is:

1. A method of determining performance of a communications system, comprising:

storing representations of plural components of the communications system, the components including a first packet-based network and at least one network device;

assigning one or more performance parameters for each of the components; and

deriving a quality indication of the communications system based on the performance parameters of the components.

1 2. The method of claim 1, wherein the components include a second
2 packet-based network, the method further comprising assigning one or more
3 performance parameters for the second packet-based network.

1 3. The method of claim 1, wherein assigning the one or more
2 performance parameters includes assigning a packet delay parameter.

1 4. The method of claim 1, wherein assigning the one or more
2 performance parameters includes assigning a packet loss parameter.

1 5. The method of claim 1, wherein assigning the one or more
2 performance parameters includes assigning a packet jitter parameter.

1 6. The method of claim 1, wherein storing the representations includes
2 storing models of the plural components, the models capable of being linked to create
3 a representation of the communications system.

1 7. The method of claim 6, further comprising providing a graphical user
2 interface in which the models may be manipulated to create the representation of the
3 communications system.

1 8. The method of claim 1, wherein deriving the quality indication
2 includes calculating an E-model quality rating value.

1 9. The method of claim 1, further comprising combining the
2 representations of the plural components to create the communications system.

1 10. An apparatus for determining performance of a communications
2 system, comprising:

3 a storage device containing representations of plural components of the
4 communications system, the plural components including a packet-based network and
5 at least one network device, each of the components being assigned one or more
6 performance parameters; and

7 a controller to calculate a predicted quality of the communications
8 system based on the one or more performance parameters.

1 11. The apparatus of claim 10, wherein the one or more performance
2 parameters include a packet delay.

1 12. The apparatus of claim 11, wherein the packet delay of each network
2 component is treated as an independent variable.

1 13. The apparatus of claim 12, wherein the controller calculates an overall
2 packet delay of the communications system by summing the packet delays of the
3 plural components.

1 14. The apparatus of claim 10, wherein a first performance parameter
2 associated with each network component is treated as an independent variable.

1 15. The apparatus of claim 14, wherein a value of the overall first
2 performance parameter is derived by combining the first performance parameters of
3 the plural components.

1 16. The apparatus of claim 10, wherein the representation of the packet-
2 based network includes a representation of a collection of links and routers.

1 17. The apparatus of claim 10, wherein the representation of the packet-
2 based network includes a representation of an Internet Protocol network.

1 18. The apparatus of claim 10, wherein the packet-based network includes
2 a public network, and wherein the storage device further contains a representation of a
3 local network.

1 19. The apparatus of claim 10, wherein the storage device further contains
2 a representation of a circuit-switched device.

1 20. An article including one or more machine-readable storage media
2 containing instructions for modeling performance of a communications system, the
3 instructions when executed causing a controller to:

4 store models of plural components of the communications system, the
5 plural components including a packet-based network and at least one network device;
6 combine the models to represent the communications system; and
7 determine a quality level of the communications system using the
8 stored models.

1 21. The article of claim 20, wherein the instructions when executed cause
2 the controller to derive an E-model rating using the stored models.

1 22. The article of claim 20, wherein the instructions when executed cause
2 the controller to store one or more performance parameters to each model.

1 23. The article of claim 20, wherein the performance parameters are
2 associated with communications of packets through the communications system.

1 24. The article of claim 23, wherein the performance parameters include at
2 least one of a packet delay, packet loss, and packet jitter.

1 25. The article of claim 20, wherein the instructions when executed causes
2 the controller to associate a performance parameter with each of the plural
3 components and to combine the performance parameters of each of the plural
4 components to derive an overall performance parameter value.

1 26. The article of claim 25, wherein the performance parameter includes
2 one of a packet delay, packet jitter, and packet loss.

Art. cont

1 27. A data signal embodied in a carrier wave and including one or more
2 code segments containing instructions for predicting performance of a
3 communications system, the instructions when executed causing a controller to:
4 assign a performance parameter to each of plural components in the
5 communications system, the plural components including a packet-based network;
6 and
7 derive a quality indication based on the performance parameters of the
8 plural components.

